ORIGINAL

Before The
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

Mailing Online Service

Docket No. MC98-1

RESPONSE OF THE UNITED STATES POSTAL SERVICE
WITNESS STIREWALT TO INTERROGATORIES OF
OFFICE OF THE CONSUMER ADVOCATE
(OCA/USPS-T3-1-4)

The United States Postal Service hereby provides the response of witness Stirewalt to the following interrogatories of Office of the Consumer Advocate:

OCA/USPS-T3-1-4, filed on July 28, 1998.

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

OCA/USPS-T3-1. Please refer to USPS-LR-1/MC98-1, Attachments 1 and 2. Please identify the specific numbers in Attachment 1 that are used to support Attachment 2.

RESPONSE:

Please see the attached additional explanation of the relationship of Attachments 1 and 2.

Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

Overview

The additional information on the following pages is provided in response to interrogatories OCA/USPS-T3 1 - 4. This information is broken into three sections:

- Computer and Telecommunications Capacity Analysis submitted in the original testimony as Attachment 1. Each item with a direct relationship to a cost component in the Detailed Cost Estimates has been assigned a number.

- Detailed Cost Estimates submitted in the original testimony as Attachment 2. Every cost component has been given an identifier.

- A Cost Component Sources/Derivations Worksheet showing the source of the unit cost and number of units for each and every component in the Detailed Cost Estimates, and the relationship between numbered items in the Computer and Telecommunications Analysis and cost components in the Detailed Cost Estimates.

Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

Computer and Telecommunications Capacity Analysis

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
TELECOMMUNICATIONS INTERNET CONNECTION Customers Accessing Mailing Online						
ACCESS - CUSTOMER/USPS						
Total Number of Users	5,981	10,439	16,275	22,815	26,650	Library Reference USPS-LR-2/MC98-1, Section E - Survey Results - Table 19A (# businesses = # users assumed)
Average customer sessions per user per year	12	12	12	12	12	Frequency is unknown at this time; One per month is assumed based on expected mail content: invoices, announcements, statements, forms (Library Reference USPS-LR-2/MC98-1, Section C, Table 5)
Customer sessions per business day	230.04	401.50	625.96	877.50	1025.00	Calculated (sessions per year / 312 business days in a year, 6 day work week assumed)
Percentage usage during daily peak period	0.75	0.75	0.75	0.75	0.75	A Peak Period of Usage is required to plan for maximum capacity. % of users expected during such a period is unknown, 75% usage is therefore assumed.
Customer sessions during peak period	172.53	301.13	469.47	658.13	768.75	Calculated (Cust. Sessions Per day * Peak Percentage)
Average session duration (no. hours)	0.5	0.5	0.5	0.5	0.5	.5 hour estimated based on observation during testing (registration/logon on, file uploads=10 minutes, document review/job submit = 20 minutes)
Peak Usage Period Hours	4	4	4	4	4	No peak usage period has been observed during the operation test, but must be considered to plan for maximum capacity: 1PM-5PM EST is assumed here
#1A Avg. No. Concurrent Sessions During Peak Hours	**21.57**	**37.64**	**58.68**	**82.27**	**96.09**	**Calculated (Customer sessions during peak period/peak period/avg. session duration)**
Access Ports Required During Peak Hours	21.57	37.64	58.68	82.27	96.09	One for each session
THROUGHPUT - CUSTOMER/USPS						
Incoming Documents/Mailing Lists Per Second During Peak Period	0.01	0.02	0.03	0.05	0.05	Calculated (Cust sessions during peak period / (no. hours * 3600 seconds per hr)
Number of pages per Document	3.2	3.2	3.2	3.2	3.2	68% 1-2 pages, 11% 3-4 pages, 9% 5-6 pages, 3% 7-10 pages,2% 11-15 pages, 7% 15+ pages (Library Reference USPS-LR-2/MC98-1, Section E, Table 12)
Number of Bytes Per Page Word Processing/DeskTop Publishing	5020	5020	5020	5020	5020	The size in bytes of an electronic "page" can vary widely, depending of volume of text and presence of graphics. A Microsoft Word file with several paragraphs plain text can require up to 10K bytes. 5K is assumed here.
Number of Addresses Per Mailing List	4,120	4,119	4,119	4,119	4,119	Calculated (annual mail volume estimate /(total customer estimate/avg mailings per customer per annum)
Number of bytes per address	200	200	200	200	200	Although address fields are defined, number of characters, other characteristics of address affect the size, 200 bytes is assumed here.
Average Bytes Per Incoming Customer Transmission	839964.69	839921.65	839956.47	839956.18	839956.43	Calculated (Average no. of pages * no. bytes per page)
#1 Incoming bytes Per Second During Peak Hours	**10063.76**	**17563.99**	**27384.40**	**38388.62**	**44841.42**	Calculated (Average Bytes Per Transmission * Incoming documents per second)

Computer and Telecommunications Capacity Analysis (Continued)

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
PROCESSING CENTER - APPLICATION SERVER Source File to PDF Conversion						
#2 Bytes Per Second During Peak Hours	**10063.76**	**17563.99**	**27384.40**	**38388.62**	**44841.42**	Calculated (Average Bytes Per Transmission * Incoming documents per second)
PROCESSING CENTER - NETPOST COMMAND CENTER SERVER Source File Conversion of Mail Merge Transactions						
Incoming bytes Per Second During Peak Hours	10063.76	17563.99	27384.40	38388.62	44841.42	Calculated (Average Bytes Per Transmission * Incoming documents per second)
Average mailing pieces per document	4,120	4,119	4,119	4,119	4,119	Calculated (total mail volume estimate / total customer estimate)
Number of Bytes Per Mailing Piece Transaction	30720	30720	30720	30720	30720	Actual Number is unknown; estimate based on observation of file sizes generated during Mailing Online software testing activity
Mail Merge Transactions Per Second During Peak Hours	49	86	134	188	220	Calculated (average pieces per document * incoming documents per second)
#3 Bytes Processed Per Second During Peak Hours	**1,516,231**	**2,646,231**	**4,125,800**	**5,783,723**	**6,755,918**	Calculated (Mail Merge Transactions Per Second * Number of Bytes per piece)
TELECOMMUNICATIONS - FTP SERVERS Data Sent from USPS to Print Sites						
Number of Printers	10	17	25	25	25	PRICE WATERHOUSE LIBRARY REFERENCE Exhibit A, Table 9, Item 20, page 15
Number of Mail Pieces Per Year	295,665,000	516,015,000	804,531,000	1,127,826,000	1,317,404,000	Library Reference USPS-LR-2/MC98-1, Section E, Table 12
Number of Mail Pieces Per Business Day	947,644	1,653,894	2,578,625	3,614,827	4,222,449	Calculated (pieces per year / 312 business days in a year, 6 day work week assumed as per marketing plan)
Average Bytes Per Page in Postscript format	30720	30720	30720	30720	30720	Estimate based on observation of file sizes generated by the Mailing Online software during the pilot.
Percentage mail merge jobs	0.5	0.5	0.5	0.5	0.5	Both mail-merge and no mail-merge are available with Mailing Online. There is no data to indicate what percentage of customer orders require mail merge and since file size varies greatly between the two options, they both must be considered
Percentage non mail merge jobs	0.5	0.5	0.5	0.5	0.5	in this analysis. A 50%-50% split is assumed here.
Compression factor using ZIP	0.15	0.15	0.15	0.15	0.15	Files are compressed using a data compression utility. .15 is an estimate of the average compression factor using any of several data compression utilities used by the Postal Service and industry.
Number of Bytes Per Business Day	1.15721E+15	3.52499E+15	8.56842E+15	1.68384E+16	2.29749E+16	Calculated (pieces/pages per day * bytes per postscript page * mail merge factor * compression factor)*(documents per day * bytes per postscript page * (1-mail merge factor))*(documents per day * bytes per mailing list)
Percentage usage during daily peak period	0.75	0.75	0.75	0.75	0.75	A Peak Period of Usage is required to plan for maximum capacity. % of users expected during such a period is unknown, 75% usage is therefore assumed.
Number of bytes during daily peak period	8.67905E+14	2.64374E+15	6.42632E+15	1.26288E+16	1.72312E+16	Calculated (Total bytes per day * peak usage percentage)
Peak Usage Period Hours	4	4	4	4	4	1PM-5PM EST assumed

Computer and Telecommunications Capacity Analysis (Continued)

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
Peak Usage Period Seconds	14400	14400	14400	14400	14400	Calculated (hours / 3600)
#4 Peak Usage Throughput Per Second to each Print Site	**6027115280**	**10799610223**	**17850876702**	**35079899904**	**47864327483**	Calculated (bytes during peak period / total seconds in period/ no. of printers)
PROCESSING CENTER - DATA STORAGE Financial Transactions						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	One Payment Per Session
Total Transactions Per Week	1,150	2,008	3,130	4,388	5,125	Calculated (Financial trans. per day * 5) weekend amount minimal
Total Transactions Per Year	59,810	104,390	162,750	228,150	266,500	Calculated (Financial trans. per week * 52)
#4A Bytes Per Transaction	**221**	**221**	**221**	**221**	**221**	**Calculated. See Attachment 5: Sources for Details**
Transaction On-line Storage Duration Requirement (days)	1	1	1	1	1	Online retrieval of payment transaction data would be required for settlement purposes only. Financial transactions are settled daily.
Transaction Backup Duration Requirement (days)	180	180	180	180	180	Per Postal Service Finance and agreement with financial institutions.
Transaction Archive Duration Requirement (days)	1460	1460	1460	1460	1460	Duration required by Visa and MasterCard
Compression factor using ZIP	0.15	0.15	0.15	0.15	0.15	Files are compressed using a data compression utility. .15 is an estimate of the average compression factor using any of several data compression utilities used by the Postal Service and industry.
#5 Transaction On-line Data Requirement (bytes)	**7625.78**	**13309.73**	**20750.63**	**29089.13**	**33978.75**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
#6 Transaction Backup Data Requirement (bytes)	**1372639.50**	**2395750.50**	**3735112.50**	**5236042.50**	**6116175.00**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
#7 Transaction Archive Data Requirement (bytes)	**11133631.50**	**19432198.50**	**30295912.50**	**42470122.50**	**49608975.00**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
PROCESSING CENTER - DATA STORAGE PDF Files						
Total Documents Per Day	230.04	401.50	625.96	877.50	1025.00	Calculated (transaction per year * average pieces per transaction)
Total Documents Per Week	1,150	2,008	3,130	4,388	5,125	Calculated (Trans. per day * 5) weekend amount minimal
Total Documents Per Year	59,810	104,390	162,750	228,150	266,500	Calculated (Trans. per week * 52)
Average Bytes Per Page in PDF format	5,020	5,020	5,020	5,020	5,020	Actual size is unknown at this time; Estimate based on observation of files sizes created during the Mailing Online software testing
PDF File On-line Storage Duration Requirement (days)	30	30	30	30	30	Mailing Online software design leaves document in Win95 Directory
PDF File Backup Duration Requirement (days)	90	90	90	90	90	No backup duration has been agreed upon. 90 days is assumed here.
PDF File Archive Duration Requirement (days)	120	120	120	120	120	No archive duration has been agreed upon. 120 days is assumed here.
Compression factor using ZIP	0.15	0.15	0.15	0.15	0.15	Assumes all backup and archives files will be compressed (.15 compression factor assumed)
#8 PDF File On-line Data Requirement (bytes)	**5196568.85**	**9069885.00**	**14140471.15**	**19822725.00**	**23154750.00**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)
#9 PDF File Backup Data Requirement (bytes)	**15589706.54**	**27209655.00**	**42421413.46**	**59468175.00**	**69464250.00**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)

Computer and Telecommunications Capacity Analysis (Continued)

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
#10 PDF File Archive Data Requirement (bytes)	**20786275.38**	**36279540.00**	**56561884.62**	**79290900.00**	**92619000.00**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)
PROCESSING CENTER - DATA STORAGE Postscript Files For Non-Mail Merge Jobs						
Average Bytes Per Page in Postscript format	30720	30720	30720	30720	30720	Actual size is unknown at this time; Estimate based on observation of file sizes generated by the Mailing Online software testing activity
Average Bytes In Full Mailing in Postscript format	126,551,145	126,544,535	126,549,884	126,549,838	126,549,878	Calculated (bytes per transaction * average pieces per transaction)
Percentage non-mail merge	0.5	0.5	0.5	0.5	0.5	Both mail-merge and no mail-merge are available with Mailing Online. There is no data to indicate what percentage of customer orders require mail merge. 50% is assumed here.
Postscript On-line Storage Duration Requirement (days)	30	30	30	30	30	Mailing Online software design leaves document in Win95 Directory
Postscript File Backup Duration Requirement (days)	90	90	90	90	90	No backup duration has been agreed upon. 90 days is assumed here.
Postscript File Archive Duration Requirement (days)	120	120	120	120	120	No archive duration has been agreed upon. 120 days is assumed here.
Compression factor using ZIP	0.15	0.15	0.15	0.15	0.15	Assumes all backup and archives files will be compressed (.15 compression factor assumed)
#11 Postscript File On-line Data Requirement (bytes)	**65501169231**	**1.14317E+11**	**1.78235E+11**	**2.49857E+11**	**2.91856E+11**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)
#12 Postscript Backup Data Requirement (bytes)	**1.96504E+11**	**3.42952E+11**	**5.34704E+11**	**7.49571E+11**	**8.75567E+11**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)
#13 Postscript Archive Data Requirement (bytes)	**2.62005E+11**	**4.57269E+11**	**7.12938E+11**	**9.99427E+11**	**1.16742E+12**	Calculated (bytes per mailing *mailings per day * req. no. of days * mail merge % * comp factor)
PROCESSING CENTER - DATA STORAGE Mail Lists						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	One Mailing List Per Session
Total Transactions Per Week	1,150	2,008	3,130	4,388	5,125	Calculated (Mailing lists per day * 5) weekend amount minimal
Total Transactions Per Year	59,810	104,390	162,750	228,150	266,500	Calculated (Mailing lists per week * 52)
Number of Addresses Per Mailing List	4,120	4,119	4,119	4,119	4,119	Calculated = avg. number of pieces per Mailing On-line mailing
Number of bytes per address	200	200	200	200	200	Although address fields are defined, number of characters, other characteristics of address affect the size, 200 bytes is assumed here.
Number of bytes Per mailing list	823,901	823,858	823,892	823,892	823,892	Calculated = avg. number of bytes per address X avg. no. of addresses
Transaction On-line Storage Duration Requirement (days)	30	30	30	30	30	No online storage requirement has yet been identified. It is assumed here for purposes of determining maximum possible storage requirement.
Transaction Backup Duration Requirement (days)	90	90	90	90	90	No backup storage requirement has yet been identified. It is assumed here for purposes of determining maximum possible storage requirement.
Transaction Archive Duration Requirement (days)	120	120	120	120	120	No archive storage requirement has yet been identified. It is assumed here for purposes of determining maximum possible storage requirement.

Computer and Telecommunications Capacity Analysis (Continued)

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
Compression factor using ZIP	0.15	0.15	0.15	0.15	0.15	Assumes all backup and archives files will be compressed (.15 compression factor assumed)
#14 Transaction On-line Data Requirement (bytes)	**852879807.7**	**1488504808**	**2320762500**	**3253344231**	**3800203846**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
#15 Transaction Backup Data Requirement (bytes)	**2558639423**	**4465514423**	**6962287500**	**9760032692**	**11400611538**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
#16 Transaction Archive Data Requirement (bytes)	**3411519231**	**5954019231**	**9283050000**	**13013376923**	**15200815385**	Calculated (bytes per transaction * trans per day * req no. of days * comp. factor)
PROCESSING CENTER - APPLICATION SERVER Backup Financial Transactions (Night Only)						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	One Payment Per Session
Bytes Per Transaction	221	221	221	221	221	SEE ATTACHMENT E
Backup Time (Minutes)	30	30	30	30	30	Four hour estimated nightly maintenance period / 8
#17 Bytes Per Second	**28.24**	**49.30**	**76.85**	**107.74**	**125.85**	**Number of trans. per day * no. of bytes * total secs**
PROCESSING CENTER - APPLICATION SERVER Backup PDF Files (Night Only)						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	Calculated (transaction per year * average pieces per transaction)
Average Bytes Per Page in PDF format	5,020	5,020	5,020	5,020	5,020	The size in bytes of an electronic "page" can vary widely, depending of volume of text and presence of graphics. A Microsoft Word file with several paragraphs plain text can require up to 10K bytes. 5K is assumed here.
Backup Time (Minutes)	60	60	60	60	60	Four hour estimated nightly maintenance period / 4
#18 Bytes Per Second	**320.78**	**559.87**	**872.87**	**1223.63**	**1429.31**	**Number of trans. per day * no. of bytes * total secs**
PROCESSING CENTER - APPLICATION SERVER Backup Postscript Files For Non-Mail Merge Jobs (Night Only)						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	
Average Bytes Per Page in Postscript format	30720	30720	30720	30720	30720	Actual size is unknown; Estimate based on observation of file sizes generated by the Mailing Online software testing activity.
Number of pages per Document	3	3	3	3	3	Three Assumed For Basic Service: 21% 5+pages, 79% 1-4 pages - Feasibility Study, page 29
Backup Time (Minutes)	60	60	60	60	60	Four hour estimate nightly maintenance period / 4
#19 Bytes Per Second	**5888.98**	**10278.40**	**16024.62**	**22464.00**	**26240.00**	**Number of trans. per day * no. of bytes * total secs**
PROCESSING CENTER - APPLICATION SERVER Backup Mail Lists						
Total Transactions Per Day	230.04	401.50	625.96	877.50	1025.00	
Number of bytes Per mailing list	823,901	823,858	823,892	823,892	823,892	Calculated = avg. number of bytes per address X avg. no. of addresses
Backup Time (Minutes)	120	120	120	120	120	Two hours estimate nightly maintenance period / 2
#20 Bytes Per Second	**26323.45**	**45941.51**	**71628.47**	**100411.86**	**117290.24**	**Number of trans. per day * no. of bytes * total secs**

Computer and Telecommunications Capacity Analysis (Continued)

CATEGORY / COMPONENT Description, Item #	YR 1999 Estimate	YR 2000 Estimate	YR 2001 Estimate	YR 2002 Estimate	YR 2003 Estimate	SOURCE
TECHNICAL HELP DESK RESOURCE YEARS Help Desk Volumes/Durations						
Total First Time Call Hours	2,991	3,344	4,377	4,905	2,876	No. of new customers (increase over previous year X 1.5 to account for customer turn over) X .5 hour estimate for initial call X 1 initial call per year - average call times estimated from experience during operational test
Total On-going calls hours	1,794	3,132	4,883	6,845	7,995	Total no. of customers X .1 hour estimate for on-going calls X 3 calls average per year - average call times estimated from experience during operational test
Total call hours	4,785	6,475	9,260	11,750	10,871	Total initial call hours X total on-going call hours
Total Help Desk Resource Years	2.66	3.60	5.14	6.53	6.04	Total hours / 1800 average workhours per resource year
Percentage of customer calls requiring technical help	0.50	0.50	0.50	0.50	0.50	Experience during the pilot indicates that this percentage is low, but 50% assumed for capacity planning.
#21 Technical Help Desk Call Hours	**2392**	**3238**	**4630**	**5875**	**5436**	**Total On-Going Call hours X % of calls req. technical help**
#22 Technical Help Desk Resource Years	**1.33**	**1.80**	**2.57**	**3.26**	**3.02**	**Total Help Desk hours X % of calls req. technical help**

Detailed Cost Estimates

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
Technical Help Desk						Technical Help Desk Manager (HD 13)	Resource Yr	100,000	1	100,000	1	100,000	1	100,000	1	100,000	1	100,000
(Refer Attachment 3, Page 13, for Capacity Analysis)						Technical Help Desk Staff (HD 14)	Resource Yr	60,000	3	180,000	3	180,000	5	300,000	5	300,000	5	300,000
	Workstations (HD 1)	Digital PC5100 w/Lexmark Printer and 3 Yr Wrnty	2000	3	6,000	Workstations (HD 15)	Digital PC5100 w/Lexmark Printer and 3 Yr Wrnty	2000		0		0	2	4,000	0	0		0
	Color Printer (HD 2)	HP Color Laser 5	4050	1	4,050	Color Printer (HD 16)	HP Color Laser 5	4050		0		0	1	4,050		0		0
	Print Driver Software (HD 3)	Adobe Postscript Level 2 SIMM	498	1	498	Print Driver Software (HD 17)	Adobe Postscript Level 2 SIMM	498		0		0	1	498		0		0
	Printer Warranty (HD 4)	Three Year Warranty	3645	1	3,645	Printer Warranty (HD 18)		3645		0		0	1	3,645		0		0
	Training for New Hires/ Replacements (HD 5)	1 week course in MOL	1000	3	3,000	Training for New Hires/ Replacements (HD 19)	1 week course in MOL	1000	2	2,000	2	2,000	2	2,000	3	3,000	3	3,000
	Word Processing/ Desk Top Publishing Software for Help Desk staff (HD 6)	Ventura Publishing 7.0	682	3	2,046	Word Processing/ Desk Top Publishing Software for Help Desk staff (HD 20)	Ventura Publishing 7.0	682	0	0	0	0	2	1,364	0	0	0	0
	(HD 7)	Quark Express	732	3	2,196	(HD 21)	Quark Express	732	0	0	0	0	2	1,464	0	0	0	0
	(HD 8)	Word Perfect Suite 8.0	346	3	1,038	(HD 22)	Word Perfect Suite 8.0	346	0	0	0	0	2	692	0	0	0	0

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	(HD 9)	Adobe Acrobat 3.0	212	3	636	(HD 23)	Adobe Acrobat 3.0	212	0	0	2	0	2	424	0	0	0	0
	(HD 10)	Access 97	361	3	1,083	(HD 24)	Access 97	361	0	0	0	0	2	722	0	0	0	0
	(HD 11)	Plus! Version 1.0	58	3	174	(HD 25)	Plus! Version 1.0	58	0	0	0	0	2	116	0	0	0	0
	(HD 12)	Microsoft Office	400	3	1,200	(HD 26)	Microsoft Office	400	0	0	0	0	2	800	0	0	0	0
TOTAL TECHNICAL HELP DESK					25,566					282,000		282,000		419,775		403,000		403,000
Management/ Administration	Workstation (MA 1)	Digital PC5100 w/Lexmark Printer and 3 Yr Wrnty	2000	1	2,000	Program Manager (Primary and Secondary Processing) (MA 2)	Resource Yr	120,000	1	120,000	1	120,000	1	120,000	1	120,000	1	120,000
Total Management Administration					2,000					120,000		120,000		120,000		120,000		120,000
Processing Center						System Manager (Primary and Secondary Processing) (PC 27)	Resource Yr	120,000	1	120,000	1	120,000	1	120,000	1	120,000	1	120,000
(Refer Attachment 3, Pages 9-13, for Capacity Analysis)						Data Base Administrator (Primary and Secondary Processing) (PC 28)	Resource Yr	100,000	1.5	150,000	1.5	150,000	1.5	150,000	1.5	150,000	1.5	150,000
	Data Storage (On-Line) (PC 1)	CD ROM 7 Bay Tower w/4 Toshiba 12X Drives	1951	6	11,706	Systems Administration (Primary and Secondary Processing) (PC 29)	Resource Yr	100000	1.5	150,000	1.5	150,000	1.5	150,000	1.5	150,000	1.5	150,000

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	Data Storage (Backup) (PC 2)	FTK 9710	50000	2	100,000	Application Software Support (Primary and Secondary Processing) (PC 30)	Resource Yr	100000	2	200,000	2	200,000	2	200,000	2	200,000	2	200,000
	Data Storage (Archive) (PC 3)	FTK 9710	50000	2	100,000													
	Application Servers (Primary and Secondary Processing) (PC 4)	Unix Sun Ultra Enterprise 3000	110,000	2	220,000	Application Servers (Prod. Backup) (PC 31)	Unix Sun Ultra/ Additional Processors and Clusters	50000	0	0	0	0	2	100,000	2	100,000	2	100,000
	(PC 5)	DASD Array 80GB	44,500	4	178,000													
	(PC 6)	Enhance Service 7X24, four hour response from vendor	3,000	2	6,000													
	FTP Servers (Primary and Secondary Processing) (PC 7)	Digital Prioris ZX6200 One Processor (Windows NT)	7,125	2	14,250													
	(PC 8)	Enhance Service 7X24, four hour response from vendor	2,850	2	5,700													

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	Application Servers (Testing and Staging) (PC 9)	Unix	20,000	1	20,000													
	(PC 10)	Enhance Service 7X24, four hour response from vendor	3,000	1	3,000													
	NetPost Cmd Ctr Servers (Testing and Staging) (PC 11)	Unix	20,000	1	20,000													
	(PC 12)	Enhance Service 7X24, four hour response from vendor	3,000	1	3,000													
	FTP Servers (Testing and Staging) (PC 13)	Digital Prioris ZX6200 One Processor (Windows NT)	7,125	1	7,125													
	(PC 14)	Enhance Service 7X24, four hour response from vendor	2,850	1	2,850													
	Payment Servers (Testing and Staging) (PC 15)	Digital Prioris ZX6200 One Processor (Windows NT)	7,125	1	7,125													

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	(PC 16)	Enhance Service 7X24, four hour response from vendor	2,850	1	2,850													
	Payment Processing Software (Secondary and Testing/Staging Servers) (PC 17)	Tellan PC*Author-ized Hub (Two Pack)	469	1	469													
	Address List Management Software: Primary, Secondary, Testing/Staging (PC 18)	PostalSoft	65,528	3	196,584	Address List Management Software Annual Usage Fees (PC 32)	PostalSoft Annual Fee: Production	10010	1	10,010	1	10,010	1	10,010	1	10,010	1	10,010
	Encryption Software: Primary, Secondary, Testing/Staging (PC 19)	PGP Server License	2,400	3	7,200	Encryption Software: Primary, Secondary, Testing/Staging (PC 33)	PGP Annual Maintenanc e	240	3	720	3	720	3	720	3	720	3	720
	Word Processing/ Desk Top Publishing Software (PC 20)	Ventura Publishing 7.0	682	1	682	Address List Management Software Annual Usage Fees (PC 34)	PostalSoft Annual Fee: Secondary, Testing /Staging	2000	2	4,000	2	4,000	2	4,000	2	4,000	2	4,000
	(PC 21)	Quark Express	732	1	732													
	(PC 22)	Word Perfect Suite 8.0	346	1	346													
	(PC 23)	Adobe Acrobat 3.0	212	1	212													

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	(PC 24)	Access 97	361	1	361													
	(PC 25)	*Plus!* Version 1.0	*58*	*1*	*58*													
	(PC 26)	Visual Studio 97	1,571	1	1,571													
TOTAL PROCESSING CENTER					909,821					634,730		634,730		734,730		734,730		734,730
Telecommunication	Setup Network Line to Initial Print Sites (TEL 1)	Dedicated Network Line (T1)	3500	10	35,000	Setup Network Line to Addt'l Printers (TEL 4)	Dedicated Network Line (T1)	3500	0	0	7	24,500	8	28,000	0	0	0	0
(Refer Attachment 3, Pages 8-9, for Capacity Analysis)	Set Up Internet Connection (TEL 2)	Dedicated Network Line (T1)	3500	1	3,500	Annual Charge Network Line from USPS to all Print Sites (TEL 5)	T1 Annual Charge (Monthly X 12)	42000	10	420,000	17	714,000	25	1,050,000	25	1,050,000	25	1,050,000
	Setup Network *Line to FDMS* (TEL 3)	Dedicated *Network* Line (T1)	3500	1	3,500	Annual Charge *Network Line from* USPS to FDMS (TEL 6)	T1 Annual *Charge* (Monthly X 12)	42000	1	42,000	1	42,000	1	42,000	1	42,000	1	42,000
						Help Desk 1-800 line (TEL 7)	Charge per hour use	3.3	2392	7,894	3238	10,685	4630	15,279	5875	19,388	5436	17,939
TOTAL TELE-COMMUNICATIONS					42,000					469,894		791,185		1,135,279		1,111,388		1,109,939
Printer Sites	Initial Print Sites - FTP Servers (PR 1)	Digital Prioris ZX6200 *Single One* Processor (Windows NT)	10,000	10	100,000	Addt'l Sites - FTP Servers (PR 5)	Digital Prioris ZX6200 *Single One* Processor (Windows NT)	10,000	0	0	7	70,000	8	80,000	0	0	0	0
(Refer Attachment 3, Pages 9, for Capacity Analysis)	Initial Print Sites - Router (PR 2)	1 Router	1500	10	15,000	Addt'l Sites - Routers (PR 6)	Estimate	1500	0	0	7	10,500	8	12,000	0	0	0	0

Detailed Cost Estimates (Continued)

CATEGORY	FIXED COSTS		YR 1999			ANNUAL COSTS			YR 1999		YR 2000		YR 2001		YR 2002		YR 2003	
	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount (Unit Cost X No. of Units)	Component (Component ID)	Unit	Unit Cost	No. of Units	Amount	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)	No. of Units	Amount (Unit Cost X No. of Units)
	Install Equipment at Initial Print Sites - Labor (PR 3)	Resource Hrs (6) @ $65.00 per hour	40	10	26,000	Install Equipment at addt'l Print Sites - Labor (PR 7)	Resource Hrs @ $65.00 per hour	40	0	0	7	18,200	8	20,800	0	0	0	0
	Install Equipment at Initial Print Sites - Travel (PR 4)	Cost Per Trip: Airfare, Hotel, Local Transport, Per Diem	2500	10	25,000	Install Equipment at addt'l Print Sites - Travel (PR 8)	Cost Per Trip: Airfare, Hotel, Local Transport, Per Diem	2500	0	0	7	17,500	8	20,000	0	0	0	0
						USPS Equipment Maintenance at all Print Sites (PR 9)	100 Resource hrs/yr @ $65.00 per hour	80	10	52,000	17	88,400	25	130,000	25	130,000	25	130,000
Total Print Sites					166,000					52,000		204,600		262,800		130,000		130,000
GRAND TOTALS					1,145,387					1,558,624		2,032,515		2,672,584		2,499,118		2,497,669

NOTES

All labor estimates are in resource years, not number of personnel. Personnel are not assumed to be working full-time on Mailing Online. Actual number of personnel assigned to Mailing Online over time will vary according to work load.

Cost Component Sources/Derivations Worksheet

Category	Component ID	Unit Cost Source	Number of Units Source/Derivation
Technical Help Desk	HD 1, HD 2, HD 3, HD4	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Item #22, Total Technical Help Desk Resource Years; Each help desk staff member requires a computer workstation, therefore units = resource (years). A printer will shared among all Help Desk staff.
	HD 5	No empirical data to support an accurate estimate for training on Mailing Online. 1000$ for a software class is typical.	Attachment 1 Item #22, Technical Help Desk Resource Years; Each resource requires training
	HD 6, HD 7 HD 8, HD 9, HD 10, HD 11, HD 12, HD 21, HD 22, HD 23, HD 24, HD 25, HD 26	Current price charged by Pacific Computer Supply, Redwood City, CA	Attachment 1 Item #22 Technical Help Desk Resource Years; Each help desk staff member requires software that simulates the Mailing Online user's environment to understand, diagnose, and resolve user reported problems therefore units = resource (years).
	HD 13, HD 14	Current internal charge for Information Technology resource is $97,000. This estimate was rounded to $100,000.	Attachment 1 Item #22 Technical Help Desk Resource Years; HD 13, HD 14 = Item #22, rounded to the nearest resource year. Due to the lack of empirical data regarding the amount of customer calls expected , one additional year was added.
Management/ Administration	MA 1	Postal Service Contract Price from Digital Equipment Corporation	The Information Technology program manager required a workstation and printer.
	MA 2		Based on my professional experience I believe an Information Systems program manager will need to devote the total number of hours shown in MA2 to over see all Mailing Online Information technology related activity.
Processing Center	PC 1	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Items # 5, #8, # 11, and #14: Sum of these items equals on-line storage requirements in bytes (P1). Two sets of three units are necessary, one for the primary processing site, another for the secondary site. The data storage equipment selected has capacity greater than the total requirement as shown below.

On-line Storage Requirements	1999	2000	2001	2002	2003
Item # 5 Financial Transactions	7625.78	13309.73	20750.63	29089.13	33978.75
Item # 8 PDF files	5196568.85	9069885.00	14140471.15	19822725.00	23154750.00
Item #11 Postscript files	65501169230.77	1.14317E+11	1.78235E+11	2.49857E+11	2.91856E+11
Item #14 Mailing Lists	8.52880E+08	1.48850E+09	2.32076E+09	3.25334E+09	3.80020E+09
Total On-line Storage Requirement (Items # 4 + # 8 + # 11 + # 14)	**6.63593E+10**	**1.15815E+11**	**1.80569E+11**	**2.53130E+11**	**2.95679E+11**
Attachment #2 (PC 1, PC 5) Capacity (Primary & Secondary)	**3.36000E+11**	**3.39000E+11**	**3.39000E+11**	**3.39000E+11**	**3.39000E+11**

Cost Component Sources/Derivations Worksheet (Continued)

Category	Component ID	Unit Cost Source	Notes/Unit Source Derivation
	PC 2	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Items # 6, #9, # 12, and #15. Sum of these items equal backup storage requirements in bytes (P2). Two units are necessary, one for the primary processing site, another for the secondary site. The data storage equipment selected has capacity greater than the total requirement as shown below.

Backup Data Storage Requirements	1999	2000	2001	2002	2003
Item # 6 Financial Transactions	1372639.50	2395750.50	3735112.50	5236042.50	6116175.00
Item # 9 PDF files	15589706.54	27209655.00	42421413.46	59468175.00	69464250.00
Item # 12 Postscript files	1.96504E+11	3.42952E+11	5.34704E+11	7.49571E+11	8.75567E+11
Item # 15 Mailing Lists	2.55864E+09	4.46551E+09	6.96229E+09	9.76003E+09	1.14006E+10
Total Backup Data Storage Requirement (Items # 6 + # 9 + # 12 + # 15)	**1.99079E+11**	**3.47447E+11**	**5.41712E+11**	**7.59395E+11**	**8.87043E+11**
Attachment #2 (PC2) Capacity (Primary & Secondary)	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**

	PC 3	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Items # 7, #10, # 13, and #16. Sum of these items equal backup storage requirements in bytes (P3). Two units are necessary, one for the primary processing site, another for the secondary site. The data storage equipment selected has capacity greater than the total requirement as shown below.

Archive Data Storage Requirements	1999	2000	2001	2002	2003
Item # 7 Financial Transactions	1150.19	2007.50	3129.81	4387.50	5125.00
Item # 10PDF files	20786275.38	36279540.00	56561884.62	79290900.00	92619000.00
Item # 13 Postscript files	2.62005E+11	4.57269E+11	7.12938E+11	9.99427E+11	1.16742E+12
Item # 16 Mailing Lists	3411519230.77	5954019230.77	9283050000.00	13013376923.08	15200815384.62
Total Archive Data Storage Requirement (Items # 7 + # 10 + # 13 + # 16)	**2.65437E+11**	**4.63259E+11**	**7.22278E+11**	**1.01252E+12**	**1.18272E+12**
FTK 9710 Storage Capacity (Primary and Secondary)	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**	**2.00000E+12**

	PC 4, PC 5, PC 6	Postal Service Contract Prices from Sun Corporation	Attachment 1 Items #2, #3, #17, # 18, #19, #20. (throughput), # 1A (number of concurrent processes/users) For throughput: The processor must be able to process maximum number of transactions on a given 24 hour period. Daytime peak = items #2 + #3 = 4,153,184 bytes per second. Night-time peak = items #17 + #18 + #19 + #20 = 62915.8 bytes per second. The greater of these two sums (4,153,184 bytes per second in year 2001) is the throughput requirement for one processor. My professional opinion is that a UNIX processor is required to meet throughput and concurrent processes/user requirements. Two units are necessary, one for the primary processing site, another for the secondary site.
	PC 7, PC 8	Postal Service Contract Prices from Sun Corporation	Attachment 1 Item #4. Professional judgment was used to determine that an NT processor will meet this requirement. Two units are necessary, one for the primary processing site, another for the secondary site.
	PC 9, PC 10	Postal Service Contract Prices from Sun Corporation	Attachment 1 Items #2. For testing, staging purpose only, thereby requiring a reduced processing capacity. Professional judgment was used to determine that an NT processor will meet the requirement. Only one processor req. at the primary processing site.
	PC 11, PC 12	Postal Service Contract Prices from Sun Corporation	Attachment 1 Items #3. For testing, staging purpose only, thereby requiring a reduced processing capacity. In my professional an NT processor will meet the requirement. Only one necessary at the primary processing site.

Cost Component Sources/Derivations Worksheet (Continued)

Category	Component ID	Unit Cost Source	No. of Units Source/Derivation
	PC 13, PC 14	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Items #2. For testing, staging purpose only, thereby requiring a reduced processing capacity. In my professional judgment an NT processor will meet the requirement. Only one necessary at the primary processing site.
	PC 15, PC 16	Postal Service Contract Prices from Digital Equipment Corporation	Attachment 1 Items #2. For testing, staging purpose only, thereby requiring a reduced processing capacity. I used my professional judgment to determine the model required. Only one necessary at the primary processing site.
	PC 17	Purchase price from Tellan	Unit is a two pack, covers both primary and secondary processing sites
	PC 18	Purchase price from Peoplesoft	Three units required, one each for primary, secondary, and testing/staging.
	PC 19	Purchase price from PGP	Three units required, one each for primary, secondary, and testing/staging.
	PC 20, PC 21, PC 22, PC 23, PC 24, PC 25, PC 26	Purchase price from Pacific Computer Supply	One copy of user software will be kept at the processing site to maintain a complete Mailing Online configuration
	PC 27	Current internal charge for Information Technology resource is $97,000. This estimate was rounded to $100,000. 20% added to account for management premium.	Based on my professional experience I believe a manager will be required to oversee processing site operations.
	PC 28	Current internal charge for Information Technology resource is $97,000. This estimate was rounded to $100,000.	Based on my professional experience I believe the total number of hours shown will be required to perform data base administration activities for both primary and secondary processing sites as determined by professional judgment.
	PC 29	Current internal charge for Information Technology resource is $97,000. This estimate was rounded to $100,000.	Based on my professional experience I believe the total number of hours shown will be required to perform data systems administration activities for both primary and secondary processing sites.
	PC 30	Current internal charge for Information Technology resource is $97,000. This estimate was rounded to $100,000.	Based on my professional experience I know that very configuration requires software support. a number of hours equal to two resource years is estimated to necessary based on the minor software enhancements and fixes will be performed.
	PC 31	Postal Service Contract Prices from Sun Corporation	Attachment 1 Item #4. Additional processing volume in succeeding years indicates that an additional processor will be required by 2001. One unit for the primary processing site, another for the secondary site.
	PC 32	Price provided by Peoplesoft	The annual fee is based on usage at primary processor (PC 4)
	PC 33	Purchase price from Tellan	One copy each for primary, secondary, and testing/staging application servers (PC 4, PC 9)
	PC 34	Price provided by Peoplesoft	The annual fee is based on usage for secondary processing and testing/ staging application servers (PC 4, PC 9)
Tele-communications	TEL 1, TEL 4, TEL 5	Postal Service Contract Prices from MCI	Attachment 1 Item #4 with consideration given to 1) Scheduling of transmissions to print sites beyond the peak period and 2) a planned change to the Mailing Online design to transmit files to print sites in a more condensed format.
	TEL 2	Postal Service Contract Prices from MCI	Attachment 1 Item #1 The requirement for year 2003 at 44841 bytes per second (358731 bits per second). A T1 line can accommodate 1,5440,00 bits per second - over 400% of the requirement. One set-up required for the processing site. One line for each printer. Number of printers as per Exhibit USPS-2A, Table 9, Item 20, page 15.
	TEL 3, TEL 6	Postal Service Contract Prices from MCI	Throughput for FDMS data will be less than throughput into internet as follows: Max. numbers of session per day in 2003 (Item #1A; 1025) X number of bytes per financial transaction (Item #4A; 221) = 22652 bytes per day. 22652 bytes per day is less than 44841 bytes per second during peak period for the internet connection (Item #1). The capacity determined for item #1 (a T1 line) should therefore be adequate. One line connection from processing site to FDMS.
	TEL 7	Postal Service Contract Price from Sprint	Attachment 1, # Item 21. One toll-free number will be provided for customer help desk support.

Cost Component Sources/Derivations Worksheet (Continued)

Printer Sites	PR 1, PR 5	Postal Service Contract Prices from Digital Equipment Corporation	One unit per print site. number of print sites as per Exhibit USPS-2A, Table 9, Item 20, page 15

	PR 2, PR 6	Typical purchase price for the Postal Service.	Number of installs corresponds to number of print sites. Number of print sites as per Exhibit USPS-2A, Table 9, Item 20, page 15
Category	Component ID	Unit Cost Source	No. of Units Source/Derivation
	PR 3, PR 7	Estimate base on professional experience, judgment.	Number of installs corresponds to number of print sites. Number of print sites as per Exhibit USPS-2A, Table 9, Item 20, page 15
	PR 4, PR 8	Estimate base on professional experience, judgment.	One install for each print site. Number of print sites as per Exhibit USPS-2A, Table 9, Item 20, page 15
	PR 9	Estimate base on professional experience, judgment.	Maintenance required for each print site. Number of print sites as per Exhibit USPS-2A, Table 9, Item 20, page 15

Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

OCA/USPS-T3-2. Please refer to USPS-LR-1/MC98-1, Attachments 1 and 2. Please identify the specific numbers in Attachment 2 that are derived from Attachment 1.

RESPONSE:

See my response to OCA/USPS-T3-1.

Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

OCA/USPS-T3-3. Please refer to USPS-LR-1/MC98-1, Attachments 1 and 2. Please show how the numbers in Attachment 2 are related to specific numbers in Attachment 1. For example, if there are numbers in Attachment 2 related to "Incoming bytes Per Second During Peak Hours" (Attachment 1, page 6), please show the mathematical or other relationship.

RESPONSE:

See my response to OCA/USPS-T3-1.

Response Of Postal Service Witness Stirewalt
To OCA Interrogatory

OCA/USPS-T3-4. Please refer to USPS-LR-1/MC98-1, Attachment 2.

a. Please show the derivation of the numbers appearing in the columns labeled "No. of Units."

b. Please show the derivation of the numbers appearing in the columns labeled "Unit Cost."

c. Please explain the basis for using the same "Unit Cost" for all years 1999-2003.

RESPONSE:

a. - b. See my response to OCA/USPS-T3-1.

c. I employed necessary assumptions regarding the behavior of these costs over time.

With respect to the cost of electronic devices and services, my judgment was based on several considerations. Unit prices for computers, printers, and peripheral devices have steadily decreased over the years. In the case of computers, rapid technological advances have caused the cost for a given amount of computing capacity to reduce by half approximately every 18 months - a phenomenon loosely termed "Moore's Law". A similar decrease has occurred for long-distance telecommunication prices. However, there is no basis on which to predict with precision whether prices will continue to decrease in the future, and if so, at what rate, so I assumed that the unit costs would be constant over the time period in question.

In the case of human resources, the price of staff time would be expected to increase over time given a predictable rate of inflation. Again, however, I cannot precisely predict the rate of increase for such costs, so I assumed constancy for the years in question.

Given the fact that the human resources costs (HD 5, HD 13, HD 14, HD 19, PC 27, PC 28, PC 29, PC 30, PR 3, PR 4, PR 7, and PR 8, in the Cost Estimates) will likely increase by no more than five percent a year (given the rate

of inflation in recent years) while the technology costs (the remainder of the cost components in the Cost Estimates), which account for more than fifty percent of the total, are likely to decrease to a small fraction of the current costs, I believe the cost estimates are conservatively high. In addition, as noted in Attachment #2 , Item #22, I calculated the number of Technical Help Desk Staff resource hours (component HD 14) based on 50% of customer call hours requiring technical assistance. I further noted in item #22 that my experience indicates that this percentage should be lower, but I used 50% for estimation purposes. Given all of the above, I believe the net effect of not calculating 1) the falling cost of technology, 2) inflation in human resource costs, and 3) an experience-based estimate of help desk hours, is an overestimate of the total cost.

DECLARATION

I, Daniel Stirewalt, declare under penalty of perjury that the foregoing answers are true and correct, to the best of my knowledge, information, and belief.

Dated: 8-7-98

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

Richard T. Cooper

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260-1137
August 7, 1998